

COOP'S TECHNOLOGY DIGEST

-A Timely Report On The World Of Communications-

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ASSIGNMENT TWO: "Our Turn"

A curious programme produced by TVNZ under the generic title of "Assignment" aired on Television 1 June 12 (7.30PM). Some background.

Television New Zealand is a state owned enterprise (SOE). New Zealand's Coalition Government primary participants (National and New Zealand First) had agreed to a review of the role of television as a SOE. "First" has long proclaimed a belief that the SOE has not given sufficient of its manpower, operating funding nor air time to the Maori portion of the population.

The SOE is under pressure to restructure itself and many of the loudest demands include decommercialising TV1 in favour of some form of non-sponsored or limited sponsorship public service broadcasting. First campaigned on the promise to return TV1 to a less commercial operating condition while at the same time offering to Maori voters the hope that a less commercial TV1 would also mean a greater portion of the resources and air time going to the Maori needs.

A Parliamentary review of TVNZ, indeed the entire broadcasting structure in New Zealand, is anticipated. The Coalition Minister of Communications Maurice Williamson is under some pressure to conduct separate from Parliament his own office's review of broadcasting policy in New Zealand.

Television New Zealand is in a position to help the public better "understand" the issues to be reviewed. TV1 reaches, by TVNZ claim, more than 99% of all households in the country. Moreover, special investigation programmes such as Assignment routinely collect 30 to 40% of the available viewers which promises a wide viewing audience.

The temptation to use Assignment as a forum for TVNZ views on this matter led to the decision to produce the programme aired on June 12th. In reporting on this programme, we have a double view:

One - The programme's own script as aired as well as the visuals selected to emphasise the text relate a game plan at TVNZ. Everyone who is in an industry involved with the effects of national broadcasting can benefit from reviewing the content of this programme.

Two - Quite by happenstance a portion of this programme included material collected by the TVNZ crew at our Far North Cable TV Ltd (cable TV system) in Northland. Thus in the process of creating the programme we will be reviewing, we were also a participant. Additionally, TVNZ had contacted us prior to creating the programme for suggestions on others whom they might visit and we supplied a list of several suggested individuals and firms.



ASSIGNMENT: Thursdays, 7.30PM, TV1

June 12th edition: "Future Visions"

**Reporter Rob Harley, Director Brett Cammille
with more than 40 years TVNZ experience
between them**

A full scale review by Parliament of the status of TVNZ as a State Owned Enterprise was unlikely even before the airing of this programme; given the content and the messages contained in the programme, such a review is even less likely after the airing. If Television New Zealand is nothing else, it is a skilled practitioner of its art and the content of the June 12th broadcast was a masterful attempt at building a case for "Leave TVNZ alone - they are doing a wonderful job." It is not our intent nor desire to attack this view as presented by Assignment, but only to point out where we believe it necessary that certain arguments presented by the programme may have been more than slightly biased in favour of a status quo - and, where blatant, some discrepancies which crept into the very complex nature of the broadcast.

-Rob Harley-

"Over the next decade as the information superhighway becomes more crowded, and the oncoming lights more dazzling, consumers of television in New Zealand will find on offer much more than most will ever need or want.

"There are some key words in the future of this medium -

"digital...

"dishes...

"interactive...

"fibre optics

"WebTV.

"The range of choice will be astonishing. But how much of it we will actually want to watch is another matter altogether. As is the question, will everyone who enters this new market with a service be profitable in the long run?"

Visuals in this segment included 1/4 second glimpses at brand name TV service logos (identifications) run by quite purposefully at a speed which 99% of the audience watching would be unable to properly identify after seeing the high speed blur. These included the following: Family Channel, ESPN, Encore, TBS Productions, USA Network, The Disney Channel, Discovery, TNN (The Nashville Network), The Learning Channel, The Sci-Fi Channel, Court TV, The Travel Channel, Turner Classic Movies, News World International, C-SPAN, E! Entertainment and Headline News.

"One of the most frequently asked questions is how should television be paid for. We have had the greatest difficulty as a society figuring out whether this medium should be high powered entertainment run along market lines - or, whether there shouldn't be something almost sacred about the frequencies - and if they oughten be at least in part reserved for worthy matters uninterrupted by commercials."

"When the partners in the Coalition were drawing up policy late last year, one of the key initiatives they agreed on was to do with commercial content on TV1. They agreed to consider whether TV1 ought to be only partly commercial with a maximum of only 10 minutes per hour of advertising." (*)

* / Of interest, this edition of Assignment devoted 45 minutes 04 seconds to the actual report, the balance to commercials, station programming promotions, plus the programme opening and close.

"TVNZ's executives were quick to respond - in early briefings to the Government, they asked a simple question: 'Do you want to kill this golden goose which has been laying rather attractive dividends for the last few years'?"

Editorial Opinion - Not Fact (OR: "Let us tell you what you should think")

"Over the next decade as the information superhighway becomes more crowded and the incoming lights more dazzling, consumers of television in New Zealand will find on offer much more than most will ever need or want."

SOE TVNZ paid to Treasury \$35.6 million in dividends in the fiscal year ending June 30, 1995; \$30.2 million in 1996. The reference here is to the "income" derived by Treasury from TVNZ operations.

-Chris Anderson, TVNZ Chief Executive-

(With reference to the "dividends") "A considerable amount of destruction of value - some 60 or 70 million dollars a year. But also - in doing that - if you are going to do that why should it only affect TV1? If you are going to do that, then surely it should effect all of the television networks - or none at all."

It was not clear what "destruction of value" was referenced here - the most obvious being Rob Harley's report of suggestions to limit TV1 to "10 commercial minutes per hour." The viewer, if he or she understood any of this, was being asked to forget for the moment that TVNZ is a SOE and in theory is owned by the people who make up the state; whereas, the other "networks" are privately owned and have no social or financial responsibility to the citizens other than being good neighbours.

-Rob Harley-

"But that is not what is on the table in Wellington - the very notion that there should be less ads on TV1 derives from the idea that the channel ought to be more the TV version of National Radio.

"One way of achieving that might be to farm out TV2 to at least partial private ownership and then milk the second channel so that TV1 could be less sullied by commercial content - at least that is what the Coalition is considering. But we understand nothing of the sort is going to happen.

"Not that Communications Minister Maurice Williamson would not like to flog off TV2 - insiders say he'd of done it years ago given his own way. What the Minister privately has bought is the argument that ads on TV1 overall should not be reduced - and publicly:

-Minister Maurice Williamson-

"One of the things we have got to be very cognisant of is there is no point in making changes that are highly detrimental to the revenue stream on the commercial side because you won't have any money left to do the things in the non-commercial or Maori or any of the other social obligation sides.

"There is a good case to say 'leave the commercial companies as much as you can intact - use them to produce the revenue streams and deliver your social obligations through somewhere else'."

-Rob Harley-

"Which means at the end of the day exactly what in terms of TV1's commercial minuteage?"

-Chris Anderson, TVNZ Chief Executive-

"Yes, we will look at premium spots and Montana Sunday Theatre has been mentioned - there are others - to look at the total level of interruptions that we make, to make it more palatable to the viewer."

-Rob Harley-

"Will there be less ads on TV1?"

-Chris Anderson-

"Bottom line? I don't know about less ads on TV1. I think there will be the perception of less ads on TV1 and the package will be better."

-Rob Harley-

"It is clear that all through the early part of this year, advertising agencies have been making their own strenuous pitch to the Government not to interfere with the television commercial content anywhere."

-Graeme Hunter, General Manager, TV3 & 4-

"With reduced minuteage, networks would be forced to put their advertising rates up so the cost to the advertiser would clearly increase. We would see a major impact on the economy of television if rates were to be forced upwards through reduced commercial air time."

-Rob Harley-

"Likely outcome, then, all things considered? The Government will probably leave commercial minuteage alone. But how, then, to satisfy what was clearly a New Zealand First push to provide some basic form of broadcasting with no ads - or minimum advertising content?"

He then went on to explain that a "basic" national network would (from scratch) be a "\$150 million investment" for a mainline, national, free to air channel. The programme switched to Alliance Communications spokesperson Pam Cokery who summarised:

"The media is now a social service - like hospitals, schools. We have our information rich versus our information poor."

Of note, a similar view is held by US President Clinton. One of his platforms is to provide a direct connection to the "information superhighway" to every school, library, public centre by 2000 - at US government expense if required. And, to create a national "Internet backbone" through the co-operation of the various competing telephone firms in North America to assure low-cost direct Internet connection to "every household in the land" by 2005. Clinton's view is that "access to Internet and the information superhighway will be as basic as elementary school education in America within ten years." His view is hardly unique - in Korea, every school leaver at age 18 will have taken 8 years of extensive computer technology courses before graduating and by 2005 every (every) home in Korea is to be equipped with a PC.

-Rob Harley-

"Some had tipped that Horizons Pacific Television (HPTV) would be a mix of Maori and Public Broadcasting - but this week TVNZ announced HPTV would become a youth oriented network majoring on music.

"It is a move that will bring TVNZ into a head to head battle with TV4 - the new Cam West channel which starts up a week later.

The visuals at this point came from the Canadian 'Much Music' channel, an initiative of Canada to compete in that country with the dominant US music service MTV. Much Music had been one of 18 programming channels scheduled for introduction to New Zealand's Saturn Communications cable TV line-up until very recently (see Bits and Bytes, this issue).

"The Government still has other UHF TV channels available to it - which could be given over to Maori broadcasting or to a public service model or to a combination of both.

"But don't hold your breath - it is by no means an assured outcome because there is no stated commitment to non commercial television."

-Maurice Williamson-

"I think with cheaper options of delivery mechanisms with UHF spectrum and so on it is possible to put together a channel than can broadcast what most people would see as a PBS channel - some sort of public broadcasting service channel.

-Rob Harley-

"It is clear that if that happened the continuing and insistent calls for a less commercial TV1 might go away.

...

...

"Look out for a licence fee increase in the near future. New Zealand on Air has been pitching for a fee increase - the last was in 1989 - and there are strong indications it will go up soon."

-Chris Prowse, NZOA Chief Executive-

"The reality would be it would probably have to be somewhere close to trying to hold back the effects of inflation over the last 8 or so years; probably in the vicinity of \$20 (more per year).

Just how might a Maori service be created, given the recent problems with the upstart Aotearoa channel in Auckland? **Assignment** visited with Tu Williams of the Maori Congress who emphatically said Maori wants and deserves suitable programming time located within (evening) prime time. He was not concerned that this sort of rescheduling of English language programming on TV1 might destroy the commercial viability of TV1.

-Mike Hollings, Te Mangai Polo (NZOA Maori arm)-

"Technology is becoming outmoded at an exponential rate and new ones are coming that are far more cost effective. Who knows what is going to be around in 6 months or 12 months time. There may be a cheaper alternative to establishing a national network.

I would imagine a stand alone network fairly well controlled by Maori would be a Maori preference."

-Rob Harley-

"There is a UHF network still tagged for Maori. The problem is it doesn't reach many rural areas.

"There are some interesting ways forward. Just recently, with quietness and efficiency Maori have been taking some huge initiatives with the promotion of their culture and language entering the age of satellite communications with a rather daring idea: How to communicate policy and ideas to hundreds of sites around the country. The method they decided to try was far reaching - a satellite broadcast - (using) a tape made in New Zealand and beamed around the country by an American owned (**) satellite called Intelsat.

** - Intelsat is actually owned by an international consortium of (121) nations through their respective national telephone service companies. New Zealand "owns" 0.660033% of the system and is represented by Telecom NZ International which maintains a "Signatory Office" operated by A.B. McClellan ((tel 64-4-498-9069). Of interest, New Zealand holds a larger stake in Intelsat than neighbours Indonesia, Malaysia, and the Philippines but less than Australia (2.590409%). When New Zealand Post operated the telephone company, the New Zealand "share" in Intelsat was actually held by the government.

"In late May, it really happened. The trial broadcasts were seen in schools and sites at Marae all over the country (***). If they can make it work, there will be little, isolated communities of Maori who can barely get a radio signal who will be kept up with their language and culture with the very latest technology.

*** - Officially, sixteen Marae sites had 1.2 metre satellite dish systems installed by Whangaparaoa based Pacific Antennas Limited. During the 8 days of tests, different groups came to the satellite equipped Marae sites to view the satellite delivered programming. Subsequent to the demonstration test, the dish antenna systems have been taken down and placed in storage as Te Kohanga Reo Trust Board deals with the next phase - designing a programme and creating a budget.

-Rob Harley-

"Somehow, someone got the idea not so long ago that people have so little else going on in their lives that the recipe for boredom is scores of channels of television. Sit in your living room now in Los Angeles, or London, or Luxembourg and the choices are endless (****).

"This is the face of Direct satellite TV, 70 channels via satellite. (Do you) Reckon it is a bit crass? Just wait. Once digital technology really kicks in there will be lots more to choose from."

****/ Visuals during this segment included cable channel idents from Trio (a service promised by UIH), News World International (another UIH service and Canadian in origin), ESPN2, Encore 7 (WAM - America's Youth Network), Encore 2 (Love Stories), Encore 3 (Westerns), Encore 4 (Mysteries), Encore 5 (Action), Encore 6 (True Stories and Drama), CMT, Cartoon Network, CNN, TBS Productions (not a cable network) and Playboy. Of interest: DirecTV presently offers not 70 but rather 142 channels of DTH television plus an additional 34 audio-only channels.

-Professor William Bands, University of California-

"The question is how many channels do you need? I have close to 70 channels into my home over my cable system - but frankly, I find myself watching - when I do watch television - less than 10 of those channels (see 'A' here).

"I am afraid the conversion to digital television will bring us more of the same - more commercial wasteland rather than a higher quality of programming."

-Rob Harley-

"Kiwi's prepare - this high tech world of choice is not just on the horizon. It is here. Drive through many Wellington streets now and observe the thick cable hanging below the rest. The so-called bucket trucks are connecting new homes every day - 22 channels of local and international television (*****) courtesy of Saturn Communications.

****/ The visuals here were ident clips from NBC, Country Music Television, TNT and Discovery - all channels carried by Saturn.

"The kilometres of cable - some above, some below ground, have roped in just 3,000 subscribers for Saturn thus far. The customer pays \$25 per month for offerings as varied as French music videos, constant New Zealand weather maps, cooking and religion."

-(Cable) Subscriber Shane Smith-

(Rob Harley: "You've got 22 channels coming in here for \$25 a month - is it worth it?")

"For the money I would say it is."

(Rob Harley: What's your viewing preference?")

"I watch mostly MCM the music channel. And I do watch 1, 2 and 3 on it - obviously the (local channel) TV reception is a bit better (than without cable)."

"A" - Our Editorial Clarification and Clearly So Labelled

Early in the report Rob Harley editorialises with the statement, "Over the next decade as the information superhighway becomes more crowded and the incoming lights more dazzling, consumers of television in New Zealand will find on offer much more than most will need or want." In Professor William Bands of the University of California, Assignment has located an American "educator" to reinforce that perspective. Bands told us, "I have close to 70 channels into my home over my cable system -but frankly, I find myself watching - when I do watch television - less than 10 of those channels."

Harley seems to be arguing that three, perhaps four channels of television is all anyone really requires. That, "If it is worthy of being on the airwaves, within three or four channels you will find it being broadcast." Bands suggests anything more than the "10 - I find myself watching" is some sort of waste; a man who has ordered three dinners but consumed only one. This line of reasoning is self serving because it assumes that every single viewer will always find interest in the very same programme material. That you or I might watch only 10 channels - but seldom the same 10 channels is somehow overlooked. At risk with this reasoning is freedom of choice - that individual viewers should not be allowed to select from the largest universe economically viable.

-Jack Mathews, Saturn Communications-

"Once we build our network, we will actually have a more advanced, high speed, data network than Telecom. I think the key to our relationship with Telecom is to conclude a realistic interconnect arrangement and I think we are quite close to doing that."

-Rob Harley-

"What is more than a little surprising to some observers is the huge capital investment being made by Saturn's American parent company - \$130 million (dollars) and 150 staff - in such a small market - with a lot of guesswork on future uptake still in the wind (see 'B' here).

"Does Saturn have some serious competition in this business? You bet they do - particularly given Saturn's desire to be in the future telecom business. The big boy on the block - Telecom - is also laying cable in Auckland and Wellington through a company called First Media, offering similar fare to Saturn.

"One industry observer says Telecom is mainly in the cable business now to protect its patch, drawing the analogy of the farmer who skins a coyote and hangs the skin on a fence as a warning to other coyotes to keep away (see 'C' here).

"Not quite so says First Media boss Graham Mitchell. But he concedes it is the telecommunications market on cable they most want to secure.

"B" - Our Editorial Clarification and Clearly So Labelled

Assignment seemed preoccupied with the thesis that somebody - underlying their report is the suggestion Saturn - will "go broke" and not be viable in this multi-channel world. In the opening paragraph, Harley asked, "...will everyone who enters this new market with a service be profitable in the long run?" He returns to this theme at several points, including pointing out the "surprise" at the "huge capital investments being made by Saturn's American parent company - \$130 million." His "expert" on this subject is Maurice Williamson who can at best only tell us that in the past some "super market chains fell over because they weren't competitive."

We would also add that when Assignment was taping at Far North Cable TV, we were asked to comment on whether Saturn was "economically sound." Our response, which they chose not to air, was as follows:

"I have been involved in the cable TV industry since 1960. In those 37 years, I do not recall a single cable TV company that actually filed for bankruptcy. If someone makes massive operational mistakes, sooner or later the system sells to someone else who knows how to correct the mistakes. Cable TV systems don't fail in bankruptcy - they have momentary hiccups caused by management errors. But they are always able to recover."

In hindsight, having now viewed the entire programme, it is probable that had I said, "Saturn is making dumb mistakes and they will fail," that segment of tape would have been aired. That is what Assignment hoped I would say.

-Graham Mitchell-

"Principally, the strategy behind this is to invest in the network now to develop our future revenue streams and to also give customers new services in the home they don't get at the moment. And secondly, it does have a spin off on the Telecom standard network out there as it gives it great reliability with a lot of fibre optic cable (going to) the suburbs that we never had before. That will improve the capacity and the reliability of the existing network as well - two spin offs there."

-Rob Harley-

"It seems inevitable that someone in this industry is going to go broke. The market is simply not big enough for Saturn, First Media, Sky and some other intending operators

trying to go head to head with not just each other but also free to air broadcasters.
Maurice Williamson says some will go bellyup."

-Maurice Williamson-

"Like any other industry in the past - some super market chains fell over because they weren't competitive with others - I think as the new technologies come on stream - the fibre, satellites and all of that becoming completely available across the country, you will see some companies get in there and make real killings and others just not be able to put it and have to exit the market,"

-Rob Harley-

"In the midst of all of this, viewers in one sense have never had it so good in terms of choice. But some of the choices they face are going to be costly. Shortly you can hook up a satellite dish ready for the day when Sky Television starts beaming in with 40 channels plus on demand movies (*****). But get ready to hand over \$650 for the dish and other hardware plus \$50 a month for the expanded service. On the other hand the cost of this technology is expected to come down rapidly. Sky TV is expecting overall viewing to actually decline around the turn of the century."

-Nate Smith, Sky-

"What we see is that as long as people are getting a value for what they are paying for, they will continue to pay for it.

"You may not be watching 30 hours of television (per week) any more - you may be watching only 20 - but if it's got the All Blacks and you are happy to see the All Blacks and pay us our monthly fee - that work's for us. It is a little more dangerous for the (free to air) broadcasters, I think, who need eyeballs in front of the screen to generate revenue."

*****/ Visuals to emphasise the choice of programming with Sky, certainly not provided by Sky and probably not an indication of the future Sky satellite channel line-up, included: (Heading - DirecTV), Family TV, ESPN, Encore, TBS Productions, USA Cable Network, The Learning Channel, Sci-Fi Channel, Disney, Discovery, The Nashville Network, Cartoon Network, Court TV, News World International, Travel Channel, Turner Classic Movies (TCM), C-Span, E! Entertainment Television, Headline News

-Rob Harley-

"Of course what this satellite business does is raise the question, 'Are we about to be inundated by a plethora of signals, choices and foreign programmes that could do real harm to our national identity in a broadcasting sense?' Does a greatly deregulated environment pose some kind of threat to existing broadcasters? Is it an off the wall suggestion, for example, to imagine an Australian channel blitzing New Zealand with (a) highly attractive series of programmes that could do real harm to our networks?"

-Chris Anderson, TVNZ-

"It is not an off the wall suggestion. I think the last advice I had (said) there are 17 to 19 satellites hovering above New Zealand (*****). Fairly soon you will be able to put up a dish and you will be able to pull down a whole range of signals from every part of the world. You can't stop - I mean no sort of culture homogeny is going to stop that. My view is that what we have got to be is absolutely strong in New Zealand programming - programming that reflects New Zealand culture and New Zealand identity."

*****/ Satellites don't actually "*hover above New Zealand*" although the image of a swarm of electronic monsters circling above us ready to pounce on and destroy our national identity is dramatic. Satellites "*hover above the equator*" at an altitude of 36,000 kilometres and in the nearest scenario are located more than 40,000 kilometres from New Zealand soil. By comparison, the distance from Wellington to London is less than 20,000 kilometres. Nobody, not even Rupert Murdoch, is "*hovering overhead*."

"C" - Our Editorial Clarification and Clearly So Labelled

The "hang a coyote skin on the fence to scare away other coyotes" analogy has uncertain origins; certainly we have printed it here previously in CTD with reference to Telecom entering the cable TV business. When Assignment's Harley discussed what he wanted from Far North Cable TV, we retold the paradigm and he instantly asked us to say it on camera. Of the 6 hours we spent together taping, the odds were higher that this "cut" would be used than any other. Ultimately, Harley decided to tell the story on his own. Perhaps because we also explained that other telecoms - such as the UK - have lost as high as 44% of their telephone customers to cable TV systems offering competitive telephony services, Assignment elected in the final cut to eliminate that frightening reference we provided. By including our complete statement, we were actually providing strength to the Saturn business plan which is of course to also offer telephony services. Since one thrust of the programme was to leave the audience with the impression that, "somebody in this business is going to go broke" (Harley, page 8 here), it would not have been good for anyone - even Far North - to plant the possibility that Telecom stock might be someday worth less on the market if Saturn does in fact make a business success of their venture.

-Rob Harley-

"TV3's Graeme Hunter doesn't rate threats from the skies very highly at all."

-Graeme Hunter-

"I think you would see an inferior stream of programming coming in - albeit designed for the mass Australian market so we wouldn't see it as a threat. (And) there are some quite complex issues in terms of programme buying rights when they are licensed to buy these programmes for the Australian market and not to broadcast these programmes into footprints beyond the Australian shores."

There followed a series of interviews with high school/college age youth and an attempt to show that teenagers follow "trendy" TV programming without regard to its origin. The clear message was that the youth market presents a difficult challenge for any broadcaster. Assignment then investigated how "dumbing down" (lowering the level of sophistication in programming) is the latest trend in the UK from which perhaps the most telling statement came from a (UK) TV5 executive who reflected, "*We don't think you need to be boring in order to be responsible (programmers).*"

-Rob Harley-

"Ratings show it is a little harder to pull wool over the eyes of New Zealand viewers. We have a considerably higher appetite for news and current affairs and prefer quality local programming to international **junk** (emphasis added by Harley)."

"The key to success in this high stakes television business seems to be about bringing the right product to the right market with a delivery system that makes sense. There are people who, for example, say cable is going to work best in a sophisticated, high density urban environment. So what about cable in the sparsely populated Far North of the North Island? Bob Cooper believes he is on his way to making it work, and pay."

"Bob Cooper's mini-forest of masts and dishes stands incongruously against the sky on a hill overlooking a northland beach. Bob is a veteran American cable TV specialist and his bold venture to bring 40 plus channels of cable TV to the Far North is just the kind of challenge he hopes to pass on to his young son Seth in the years to come."

-Bob Cooper, Far North Cable TV Ltd.-

"I have built in excess of 50 cable (TV) systems prior to this. Most of them have been done in relatively rural areas and I have learned a few tricks in doing that - tricks that make it economical. So the answer is you can do it in a rural area as long as it is not too rural. I need 30 potential cable subscribing homes per kilometre to make it economical."

-Rob Harley-

"Bob Cooper needs just under 350 homes on his network at monthly subscriptions between \$25 and \$80 depending upon how many channels are accessed. Among the 200 current subscribers, retired folks and solo mums with entertainment hungry youngsters."

-Bob Cooper-

"Will I be able to go to Hawaii 3 times per year on the proceeds from this cable system? Never! And I never anticipated I would. I built the system because I felt it needed to be built as a model system. People were saying, 'Cable is only for Wellington, Christchurch and Auckland' and I said, 'No - I don't think so. I know differently.'"

-Rob Harley-

"What Bob Cooper and others are proving is that if nothing else, optimism and innovation are alive and well when it comes to locally targeted television issues. Others include players such as The Family Television Network, sourced out of The Christian Lifeway Ministries headquarters at Snells Beach, just north of Auckland. By steadily expanding into nearby communities on the UHF band, they have acceptance through a pitch of wholesome family entertainment and close to home content.

"This principal is also working in suburban Auckland where a service called Local Link (*****) targets several localities with news about their neighbourhood. Local Link is more like running on a shoestring than just about anything else you will find in Television. Reporters research, videotape, interview, script and voice their own entire bulletins which are then edited on computer and fed into First Media's cable system.

Two and one half staff members for an entire channel. Versatile, giving significant pointers to the future of the medium. Lean and mean will rule.

"But who lives and who dies in broadcasting is ultimately of less interest to consumers than answers to some pretty fundamental questions about what we watch and how. People want to know, for example, what is the potential interaction between the TV, the VCR, the video collection and the personal computer.

"Because the technology exists right now - if you have a mind to - to watch a block buster movie on your laptop. Personal computers now also allow through Internet a series of multiple moving images from a number of information sources. "

*****/ Local Link is a project of Television New Zealand (although not so identified in the Assignment report), created as a "local programming package" for use by cable TV systems. First Media is the initial TVNZ "client" for this service. TVNZ has pitched Local Link to other cable operators as a turnkey - they provide all of the equipment and staff, the cable operator provides the channel space - in the range of \$150,000 per year. One-person news production staffs are common overseas, especially in the cable TV arena. By comparison, the TVNZ TV1 Assignment crew that came to visit Far North Cable TV consisted of four people; quite a contrast to the "lean and mean" approach of Local Link.

-Reg Russ, TVNZ, while displaying Internet connection-

"Here I have actually logged on to Thailand..."

(a curious example as Thailand triple X rated web sites are world famous for their explicit content)

-Rob Harley-

"...and television screens now become visual display units for your PC. And you can send and receive email through your TV set. The choices are expanding by the day.

"Push a button on the cable remote and order a movie. But be prepared when you think about replacing that TV set in the near future to get to grips with the digital revolution.

"Sure - the new digital signals which eventually all broadcasters will send out will be better. But digital is optimally received on new, wider screen TVs - which are a good deal more expensive. Eventually we will all need one.

"The challenge for the providers of our entertainment and information will be to compete in an increasingly crowded leisure market. Thrills need to be good to win market share and it is expected the most difficult target to reach with any medium will remain people under 25.

"But as for where we get our information, it is predicted that as the next century begins, most of us - especially those over 25 - will still read a daily newspaper. We'll still read an average portfolio of 4 to 5 magazines. We'll still watch 18 to 20 hours of live TV per week. Cable or Sky will be in about half of all homes and 60% of us will own a PC. Internet will reach critical mass with about 400,000 regular users.

"But the revolution will only just have begun.

-Bob Cooper, Far North Cable TV Ltd.-

(Holding up a copy of a VHS tape movie) "(Today) you can go into a store and rent this, buy it - somehow you acquire it. This (VHS tape) holds one movie - it runs 2 hours or so and that single movie consumes all of the space available on this tape.

"Go down the road five short years and this (holding up a small 'block') is a quartz crystal that is 1 centimetre square. This is already functional and the Japanese creators of this technology are presently turning out prototype products like this. Inside this tiny cube is not one movie but 50 - 50 total movies in a cube so small you can slide it into a watch pocket.

"Somebody who doesn't care to watch movies might say, 'I don't care about that - I can't watch the movies I now have available to me.' This same cube will hold everything in text form ever published from Gutenberg in 1450 to the year 1910.

Every word ever published in a tiny cube 1 centimetre square.

"This kind of technology will permeate and evolutionise broadcasting, cable, the rental store - even libraries. It will permeate everything we do with information exchange."

(*****)

-Rob Harley-

"When changes like this come upon us, the dilemmas over who runs and profits from the information super highway will have only just begun."

-(Carol Hirschfeld, presenter)-

"The office of Communications Minister Maurice Williamson says the Coalition Government review of broadcasting policy in New Zealand may not be completed until close to the end of the year."

*****/ What was also said, but not broadcast, was "A small box of these cubes - numbering fewer than 100 total - will have the capacity to hold every printed word now stored in a major national library from Gutenberg to the year 2000. In effect, a total library on a single bookshelf with the sum of all of man's knowledge and experiences occupying about as much shelf space as perhaps ten of today's VHS tapes. Given this dramatic change in information storage and retrieval, it is difficult to imagine why books and printed materials as we now find them in today's libraries should continue to exist much beyond the period 2015 to 2030. When you check into a motel in Auckland in 2020, the Gideon Bible you find on your night stand will be a quartz crystal cube ready to insert into a PC-video-player that is a part of your TV display system in your room. I shouldn't be planting Pinus Radiata seedlings for production of pulp and paper much beyond 2000."

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TECHNOLOGY BYTES

...BITS and BYTES you may have missed in the rush to make a dollar ...

June 25, 1997 ♦ VOLUME 97-05-38

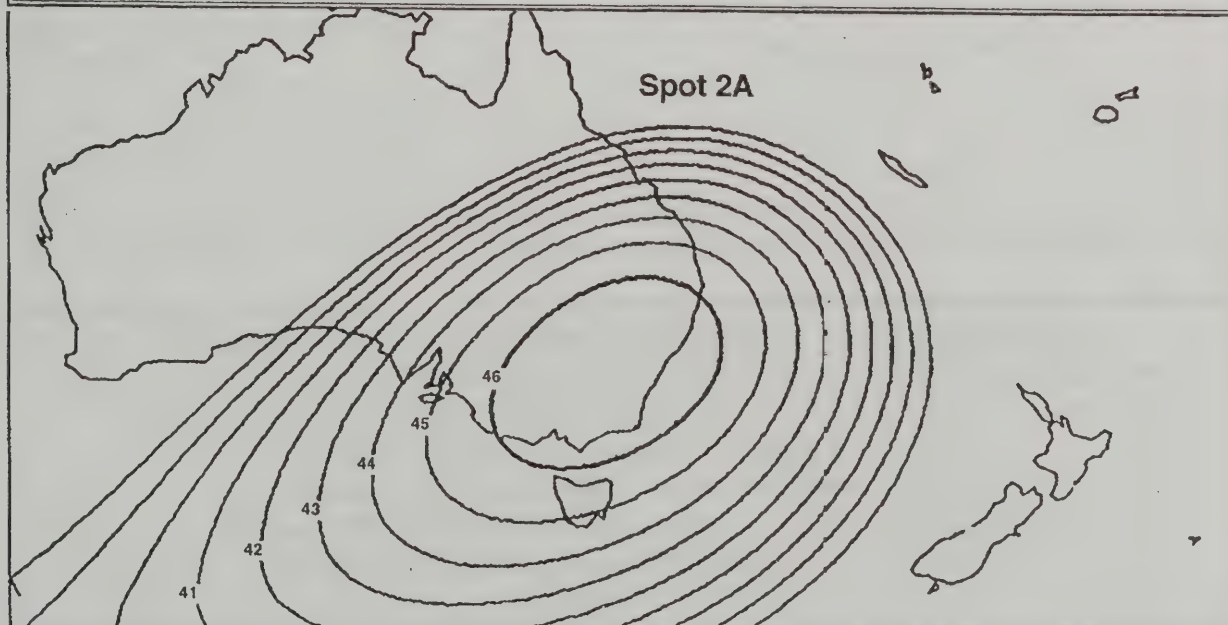
Satellite TV & Radio

Blue movies. Two channels of blue (i.e., "Adult") have appeared on Intelsat 702 (177) on Ku band. The twin channels, 24 hours per day in NTSC, are within the SPACE TV Systems Asian digital bouquet and according to James Tzeng will remain "free to air" until 1 September. The channels are uplinked from Taiwan; Intelsat has no internal rules prohibiting "adult programming" although PanAmSat has a firm rule against this genre of entertainment as does Palapa and Rimsat. AsiaSat has no announced policy in this area. The bad news for New Zealand would-be dish system sellers is this digital bouquet is on an Australian spot beam (see below) and is not likely to be useful except with larger dishes (3.1m and up, several of which report reception as we go to press). In Australia, the footprint predicts a range of antenna sizes from 90cm to 1.2m across all of the eastern seaboard. The service is using a variant of the DVB Complaint MPEG-2 (digital) format; Nokia (software version 2 and higher) receivers are producing high quality images in Australia as are Panasat 630 models equipped with CA modules. However, when the service begins conditional access only those with smart card subscriptions will be able to continue viewing. Relevant numbers are: 12.612 GHz, Msym 26.694, FEC 3/4; contact is James Tzeng Taiwan (tel ++) 886-2999-2939.; a detailed report in SatFACTS Magazine, July 15th. Note: There are many unanswered questions regarding this package - we urge caution with any dealings with this firm at this time.

Intelsat 802 is scheduled to be launched June 26th (local time), the first step in a complicated series of changes affecting the South Pacific region. 802 will go to 174E which presently has I701 operating. Testing of 802 (which is likely to take place in the region of 172E) could begin as early as the third week in July. When testing is complete, the satellite will move to 174E and all traffic will switch over (sometime early in August is likely). The only video on 701 are occasional feeds (Korea, et al) on 4187 and 4166 and 802 from that location will not instantly have more. Once 802 is firmly in place and 701 is shut off, Intelsat will move 701 east to 180E where it will replace now aged and inclined I511. The changeover from 511 to 701 (at 180E) could occur as early as 1 September. The improvement in service from 180E will be dramatic with far stronger C-band signals

Intelsat IS-702 at 177°E

Ku-Band Spot 2A Beam EIRP Footprint Over Australia



in addition to ending the inclined orbit tracking which is presently required. However, 701 has an entirely different set of footprint coverages from 511; in the best case 511 over New Zealand and Australia has been 29 dBw while many transponders have been 23.5 dBw. With 701 at 180E, signals will be either 33 dBw (2.4m dish) or 26 dBw. Some of the present 180E services, such as RFO Tahiti (now on 4045 MHz) will actually disappear for New Zealand and Australian viewers since 701 has eastern and western beams and the Tahitian service will be on an east-only footprint.

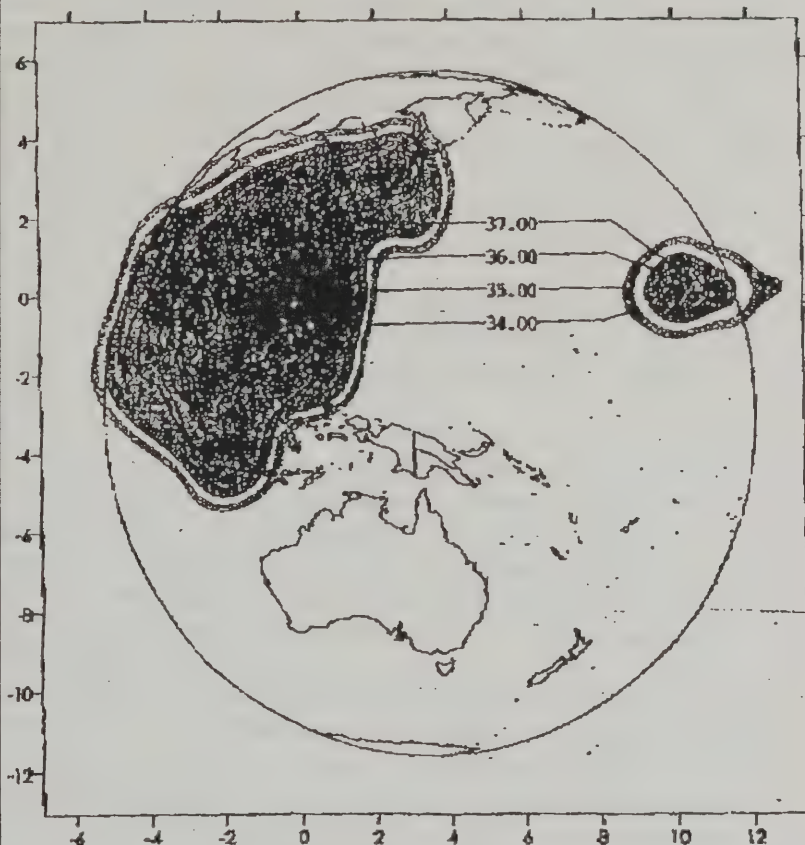
China's export TV service, CCTV, has grown to six nearly full-time digital programming services on PAS-2 (3716.5 Vt). The PowerVu service, also able to be received on Hyundai HS-100C and Nokia 9500 S, now includes: (1) CCTV-1, (2) CCTV-3, (3) CCTV extra (typically a movie at 11PM NZT nightly), (4) CCTV Master feed, (5) CCTV-5, and (6) CCTV-8. There are now 30 Mandarin language TV services on satellite and more promised.

Filipino Agila 2, scheduled for launch in July by Chinese Long March (and very unlikely to be launched on schedule) will go to 144E according to project co-ordinator, not 153E. The exact location of Agila 2 has been unsettled, largely because the satellite will carry a high power set of Ku band transponders and the potential for interference to existing or planned Ku satellites is considerable. As forecast, the 56 dBw centres (and typically 49 dBw outer contours) are primarily (and very cleverly, if it works!) confined to the scattered islands of the Philippines on a "western footprint" pattern. The C-band service from the same location is much larger in coverage although none of the signal comes south of the Equator and the only eastern service is confined to the Hawaiian Islands. The boresite centre patterns will be 41.5 dBw; suitable for C-band service on dishes of only 1m size; see pattern to right.

AsiaSat 3 manufacture is "proceeding according to schedule" according to the Hong Kong based firm with a possible launch date now estimated between 15 October and 1 December. The satellite will go to 105.5E where it will replace ageing AsiaSat 1 while this original satellite will move to 122E where it will spend its last days prior to a scheduled replacement with AsiaSat 4 sometime in 1999.

Sky Australia (horse racing service) has now converted to full-time MPEG-2 digital service on AsiaSat 2. They were previously using an analogue B-MAC encrypted conditional access system. The new digital service is operating on 4015Hz, Msym 18.000, FEC 1/2 with three programme channels (Sky 3, Sky 2 and Sky Channel Racing). Subscriptions

Peak EIRP = 41.54 dBW, Worst Case



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-MURDOCH Does It Again-

Rupert Murdoch's News Corp empire is making a play for yet another North American DBS (direct to home, Ku band) TV service operator; Primestar is the latest target. Primestar is owned primarily by TCI and Time-Warner, both of whom have a stake in New Zealand Sky Networks. Primestar began as a cable industry answer to Hughes DirecTV and initially was marketed only by cable systems to viewers who lived beyond cable TV service lines. In February News Corp and recent newcomer Echostar announced a US\$1B deal to merge the under construction News Corp (+ MCI) owned ASkyB with Echostar. In April that deal came apart (SatFACTS May 15, p. 28) and multi-billion dollar lawsuits have been filed by both sides. Now Murdoch and Primestar have announced a new business alignment wherein News Corp owned satellite parking slots are being sold to Primestar for US\$1.1B in stock. The deal takes Murdoch out of the direct operation of an American DBS service but leaves News Corp with 30% of the nonvoting stock in the new 'TSAT' which is publicly traded but owned by TCI and other cable operators. The assumption, not verified at presstime, is that Primestar will proceed with the construction and launch of the new ASkyB satellites and operate them under 'TSAT' from the orbit spots News Corp and MCI in partnership purchased from the (US) FCC last year. The merger does place 2 or the 3 prime "high power" DBS transmitting slots in the satellite belt in the hands of a company that is basically controlled by the cable TV industry. TCI funded Tempo satellite at 110W has 32 transponders on board; Primestar has FCC authority to operate 11 transponders from this slot while ASkyB has permission for 21. The 32 transponders would be capable of supporting nearly 200 digital channels from one location to dishes as small as 60 cm. There are likely to be questions raised before regulatory groups that must pass on the deal as to the wisdom of allowing cable's only significant competitor, DBS, to now be controlled by cable itself.

On the same day the Primestar deal was announced (June 11), Murdoch announced the merger of his Fox Kids Worldwide (FKW) with long established US based Family Entertainment Network (IFE). FKW is reported to be paying US\$1.9B for acquisition of IFE including assumption of IFE debts totalling US\$200m.

The month of June is always an active one for Rupert Murdoch. There is a reason. News Corp relies heavily on 'revolving credit' which has no specified repayment date and for which the banks are usually willing to continue to 'roll over' (renew) provided the interest is paid. One of the principal conditions attached to Murdoch's revolving credit is that News Corporation borrowings as of June 30th of each year must never exceed 110% of the business's net assets. Every year in June there are significant "deals" at News Corp to bring the firm's assets in balance with the revolving credit limitations. Deals completed by 30 June go to the "asset" line of Murdoch's News Corp.

In a conglomerate as multi-layered as News Corp and its dozens of subsidiary firms, there are many opportunities to move assets around to satisfy the bank's June 30th requirements. News Corp accounting practices follow Australian law and regulations and this makes it possible for some fancy footwork with respect to asset value. One of the primary asset values attaches to "titles" - non tangible items such as the name brand "Sky Broadcasting." These titles are revalued not less often than every three years under the direction of merchant bank Hambros. News Corp claims they never assign an asset value greater than 70% of the valuation tendered by Hambros but Hambros itself relies upon News Corp personnel and figures to arrive at their evaluation.

The net effect is that the News Corp accounting department takes over each June, shuffling assets, reassigning valuations, and recommending mergers and investments so that by the 30th of June each year assets on paper meet the criteria of bankers. Analysts believe none of this would be possible if News Corp utilised accounting principals and abided by the audit regulations of countries other than Australia.

are available to a range of users including DTH but the rates are very expensive using a PACE DVS-211-GP2 (Andrew Bell, tel 61-2-9975-2942).

STAR TV Asia replaced their 3 programme channel line-up on 3900 horizontal (AsiaSat 2) June 18th after conducting tests for the new package format on June 16th. The relevant numbers are 3900Hz, Msym 28.100, and (a change) FEC 3/4. The new programme channel line-up is (1) Sky News London, (2) Sports contribution, (3) Channel [V] International, (4) Star Movies Japan, (5) Star Plus Japan, (6) 'Channel 6'. As CTD goes to press not

all of these channels are active with programming. Receivers which had previously loaded the STAR service under the old FEC 1/2 will need to have their memory of the STAR parameters wiped clean and then re-entered with the new (FEC) to continue working on this bouquet. STAR TV is using the same conditional access, IRD and card for their AsiaSat 2 transponder 2A (3700 vertical), 7A (3900 vertical) and consumer directed Indovision (Palapa C2) transmissions. The receiver of choice is the PACE DVS-211 (GP), also in use with its own smart card for the AsiaSat 2 Sky (Australia) horse racing service. However, each card has its own approval system and a card authorised for Indovision (for example) will not access any of the other services. Further complicating matters - some of the 7A (3900 AsiaSat 2) services are in NTSC rather than PAL and this requires "Star Version software" that supports the NTSC transmission parameters. The primary users of these 7A services are cable operators in Taiwan which suggests where there are cards with the appropriate approval and receivers with the appropriate software.

Hyundai vs. Nokia update. The Hyundai will not load the AAR/RAI PAS-2 service channel, while the Nokia will. However, the Nokia will not load the MEGA TV 5 programme channel (C2) service while the Hyundai will. And, only the Hyundai will load the Myanmar (national TV service) SCPC carrier on As2.

TV/Com, owned by Hyundai, has reached agreement to supply home style MPEG-2 DVB receivers to Italian pay TV channel Telepiu. TV/Com plans to release similar model receivers to general public but not until after the Telepiu system is operational.

Philips is now handling the 3950/11 satellite IRD developed for the Chinese market through their Australian office (Philips Communication & Security Systems, 34 Waterloo Road, North Ryde NSW 2113; tel 61-2-9888-0483; fax 61-2-9888-0440). The claim the receiver works on the Chinese SCPC services as well as WTN SCPC news feeds and European Bouquet (all from AsiaSat 2). This receiver was initially supplied to China as a part of the launch of the Chinese SCPC service; it turns out it does more than SCPC. The DVS 3950/11 handles SCPC at Msym rates of 4 to 8 and MCPC signals with Msym rates of 15 to 30. Additionally, the receiver is equipped with an ISO7816 Smart Card Reader (CAM) for the CryptoWorks conditional access system. A later model, DVS3951, is scheduled for release soon with output video in PAL B, G, D, I, K, M, N plus NTSC and SECAM. Both units are rack mounting for SMATV and CATV use and operate with front panel direct entry controls.

Chinese digital DTH market, estimated at 1,000,000 IRDs in first year by industry suppliers, may be significantly altered by recent announcement that US based General Instrument has gone into partnership with Xi'an Yellow River New Era and China Radio & TV Co. to produce digital IRDs in China. This will be the first Chinese based digital IRD manufacturer and it is likely to gain major share of market against foreign competitors.

Short term users on As2 include International Telecom Japan (using C-band to link out of Japan events in the International Amateur Athletic Federation tests), Worldwide Television News will be using As2 to link out coverage of the hand over of Hong Kong to China late in June; (the) Pacific Television Centre (USA) has signed a part time agreement to use a full 36 MHz C-band transponder on As2 to broadcast Arabic language programming (in free to air analogue).

RSCC (Russian Satellite Communications Company) has announced plans to replace existing Gorizont (and well on the road to retirement) satellites at three key orbital locations by 2001. Of interest to Australia and New Zealand, Gorizont satellites at 90E and 103E will be replaced by a new design of geostationary bird with between 42 and 48 transponders operating in both C and Ku band.

US DBS operator Echostar which had a "deal" with Murdoch and News Corp during February and March for merger is now "firing back" at announced merger between Murdoch's ASkyB and DBS operator Primestar. In release from Echostar, they say:

"Consumers across the country (USA) would object in mass if they understood Primestar, Inc., a proposed comprehensive combination of the five largest cable companies in the world including the largest content providers in the United States with perhaps the most powerful media mogul (Murdoch). It is clearly not in the public interest to give the single piece of real estate space

which is most capable of fostering effective competition to a cable and content cartel of unprecedented size and proportion. This proposal, if permitted, would clearly result in even higher cable television rates and the consumer will continue to be held hostage to the powerful cable interests. This alliance will violate the spirit of the (US) 1996 Telecommunications Act and the

best intentions of President Clinton and Congress in passing what was intended to be comprehensive pro-competition legislation. The stark contrast with Rupert Murdoch's recent promise to (the US) Congress that he would 'offer consumers a full fledged, satellite delivered alternative to cable' is disturbing and raises serious questions. This transaction is obviously anti-competitive and anti-consumer. We are confident that the Federal Communications Commission, the Department of Justice, and the Federal Trade Commission, together with

federal and state regulators charged with protecting consumers, will reject this alliance. We trust that our leaders in Washington will not allow the 'Big Cable Operator in the Sky' to deprive American consumers of a competitive choice. Echostar Communications Corporation intends to vigorously oppose this anti competitive combination on many levels. Echostar notes that in its pending litigation with News Corporation, Ltd. ('News Corp'), in US Federal Court in Denver (CO), it has demanded damages and specific performance from News Corp which prohibits News Corp from completing the transaction with Primestar."

News Corp. response to Echostar break-of-contract suit seeking US\$5B in damages and reinstatement of US\$200m loan is that "Echostar chairman Charles Ergen, after February announcement of companies' deal, sought to retain and exercise his well-entrenched dominance of Echostar to gain control of the DBS venture." News Corp made a number of allegations in court including that, "during due diligence, Echostar withheld information on criminal conviction of Echostar subsidiary and one of its senior employees on charges of illegal export of satellite (receiving system) parts." Reference is apparently to suit brought by General Instruments in 1986 charging that a company owned by Echostar was shipping GI Videocipher analogue decoder modules to customers outside of the United States, at the time an activity prohibited by US law. Subsequently the US law was modified in this area. News Corp also charges Echostar refused to consider "in good faith" request by News that joint venture utilise News Datacom encryption system, electing instead to utilise a system (already in use) which Echostar had sourced separately.

Sony and Fuji TV Network have become latest partners with News Corp in its planned 150 consumer channel DTH JSkyB service scheduled to begin operation in 1998. JSkyB was founded by Softbank and Murdoch interests and plans operation using Ku-band capabilities of JcSAT 4 or 5 satellite beginning in March of next year.

Rupert Murdoch is back tracking from his now infamous 1993 speech in which he suggested that satellites pose a threat to regimes such as presently governs life in China. It was shortly after that speech that Chinese officials banned importation and distribution of Star Asia TV programming without special approvals. Such permission has largely been limited since that time to international clientele hotels. Speaking in Tokyo on May 15th, Murdoch told audience, "Western companies such as News Corp have much to learn about doing business in China. We need to pay special attention to China's unique cultural heritage." He went on to say Star, if allowed to beam broadcasts to China, would respect China's "one party system of government."

Japanese Mitsubishi intends to compete with the world's geostationary telecom satellite builders from a new facility in Korea. They plan capacity to produce 3 complete up to 3 ton satellites per year by 2000.

New DBS casualty: Alphastar service headquartered in Canada but trying to sell up to 120 channel service in USA and Puerto Rico. After convoluted year of trying, firm had 54,000 subscribers in US against millions plus of competitors DirecTV and Echostar.

OPTUS B3 testing of new pay-TV programming for Optus Vision (12.563 Hz, 12.626 Hz; Msym 20.000, FEC 7/8) has come up in level to be usable in NZ on appropriate size dishes since June 19; presently FTA.

Canadian court, Saskatchewan Queens Bench, has ruled that Canadian national government law that makes it illegal for a Canadian to own a US DBS dish and subscribe to US satellite programming is illegal. In case before court, a gray market distributor of US DBS hardware and software was found not guilty of violating any Canadian law. Further, court decided that Canadians who build or sell unauthorised descramblers or smart cards to access US DBS programming are not violating any Canadian laws since US DBS operators are not recognised by nor protected by Canadian law. In effect, court decided Canadian supplier - previously arrested and charged with piracy - had broken no laws.

Standard and Poors financial news service, customised under trade brand "Infoscan," has been announced in New Zealand. Service is downlinked from PAS-2 through dish installed in Hawkes Bay region. Basic service is being augmented by New Zealand created financial information although original data originates within APTV SCPC MPEG transmission path. Similar basic service is also available (with authorisation) via AsiaSat 2 at 3815.1 Hz. APTV recently signed agreement to utilise PanAmSat network of satellites for the Americas and Europe.

Digital TV & Radio

Analogue TV signals, when degraded, can still be viewed (with snow-noise). Digital signals, when degraded, are simply not displayed. There is no such thing as an imperfect digital signal - if there is any reception at all, it is blemish free. And this is the root of new concerns by engineers worried about homes that presently put up with less than high quality analogue reception, using indoor "rabbit ear" or unsuitable attic or rooftop aerials. Viewers who now simply accept degraded reception will be viewers with no reception at all after the conversion to digital. This is rekindling interest in designing improved, no-adjustment indoor TV reception aerials which the average consumer simply plants on a wall and forgets - with no need for adjustments. Present day set-top "Rabbit Ears" that alter the quality of the colour and show multi-path ghosts when someone moves around in the

room will no longer be satisfactory for digital TV reception. The engineering challenge is obvious - design an idiot proof indoor TV antenna that is not adversely effected by objects around or near it. There are some sizeable financial rewards waiting for the invention of this new device. US market for "set top antennas" for TV is estimated at 4.5 million annually.

Sony study suggests that while US government may mandate December 31, 2006 date to "turn off all analogue TV transmitters" and similar drop dead dates are being studied for many European countries, that at best analogue to digital conversion will take "more than a decade." Sony believes a sizeable universe of analogue receivers will remain in use by 2006 and to that forecast they plan a series of set-top digital to analogue set-top converters. The set-top units will allow consumers to continue to utilise analogue style receivers indefinitely although few if any of the advantages inherent in digital transmission technology will be available with the converters.

Panasonic is suggesting that it, too, believes the analogue to digital conversion can not be forced upon consumers. Accordingly, the firm says they will introduce digital set-top converters as a first line of product in time for the 1998 Christmas season; full digital TV sets will follow. Panasonic says all of their planned digital TV receivers will have the 16:9 widescreen displays - none are planned for markets outside of Japan before the 1998 season.

Prediction by consulting firm A.T. Kearney that 20 million US households will own HDTV (digital) TV sets by 2008 is latest suggestion that US FCC goal of turning off analogue TV transmitters by 2006 is not universally supported. US total marketplace is just under 100 million homes.

CBS television network has committed to launching HDTV transmissions from stations located in San Francisco, Detroit and Philadelphia by 1 November 1998. New York City station is already on air in test mode. Additional CBS owned and operated outlets in Boston, Chicago, and Los Angeles are scheduled for HDTV by May 1, 1999.

Digimax is latest new technology to challenge the way we archive and retrieve data and video. Digimax is technical combination of DVD and ill-fated DCC (audio) format, created by Philips. Concept is that you can take 8mm size specially formatted high density video-tape-like product and using DVD compression store 7 hours of digital video quality material on a single cartridge containing 1,000 feet of tape. This is equivalent of 13 Gb of storage capacity and Philips says the next generation will double this to 26 dB (14 hours of continuous play digital video on a single cartridge). Philips believes Digimax will be a "direct competitor to D-VHS" for archiving of video, computer backup and archiving, high speed Internet browsing, for playing networked games on Internet and other applications. Data rates from 4 to 15 Mbps are accommodated. September is target release date: US\$500 for the machine, US\$20 for a blank Digimax tape cartridge.

Europeans are being singled out by the world's broadcasters for their lack of interest in pursuing the "growth opportunities possible in broadcasting through use of the high definition television" technology. Virtually all European broadcasters are viewing the switch from analogue to digital broadcasting at the terrestrial level as an opportunity to increase channels of programming delivered, rather than as an opportunity to deliver higher quality images to consumers.

Consumer Electronics

WebTV, the Internet conversion box that allows the home TV to be used for surfing of the web, continues to draw new products. Although the US market for WebTV units only passed 56,000 in April, and Microsoft has agreed to purchase control of the firm (US\$425m), the concept is believed to be a consumer marketplace winner. What is not so clear is whether or not WebTV, the creator of the product, has any real unique software or technology which competitors cannot go around with their own product designs. Latest to enter the field (Sony and Philips already supply units) are US based Curtis Mathes, Diba Information Services, Samsung, and semiconductor maker Zilog. Most of the boxes are priced in the region of US\$299 -399 but most firms in the field believe the price point will drop to US\$199 before the end of his year. One marketing firm, PlanetWeb, is suggesting that Internet Service Providers (ISPs) will be able to purchase the units in bulk at such attractive pricing within a year that the units will be "given away free to the consumers in exchange for their signing a multi-year Internet contract with the ISP." Look for Microsoft/WebTV to make significant announcement concerning service into Australia within next month. Major supplier NEC has introduced InterRaku TV with Navio TV Navigator built-in - a 28" widescreen TV set with double-screen function, 64 bit RISC CPU, 64 bit graphics accelerator, 33.6-kbps internal modem, 1-Gb hard drive, 8-Mb RAM, wireless IR remote and optional wireless connected keyboard. First sale is in Japan with US\$2,600 price tag.

Handheld PCs, launched as world-wide product just 8 months ago, with typically 2 Mb of memory are upgrading fast to 4Mb memory as "standard." Designers say people who need PC-on-the-go applications expect to be able to use the same programmes and applications as with their home PCs and 2 Mb of memory does not allow stacking of multiple programmes. Pricing is also falling even as memory doubles; typical 2 Mb models

-Here's A Product You Never Thought About-

IBM Europe has filed patent applications (746147 to 746153) covering an "Electronic Graffiti" creation. The software which is intended to go into multimedia set-top TV boxes (such as satellite IRDs, cable converters et al) allows users to freeze frame an image on screen, then electronically "doodle" on the frame. Suggested applications: "Freeze frame image of a politician, add a moustache, change the hair line, enlarge the ears ..." There is more. The timbre of the voice of a speaker can be "comically altered to amuse the viewer." And more. If viewers don't like looking at a particular face, they can use "wall effect" to carve out the face and substitute one more to their liking.

are now being cleared at US\$399 as 4 Mb models with built in (typically 28.8-kbps) modem are being listed at US\$499 to 699. If you think present notebook PCs are the final word in size and portability, think again. Two new products announced put size into perspective. From Toshiba, minutebook "Libretto 50CT" measures 8" x 5" x 1" with 75 MHz Pentium, 810 Mb hard drive and 16-Mb RAM in package under 2 pounds. Competitor Mitsubishi is showing AMiTY pen-based PC with 7.5" LCD at 640 x 480 pixel VGA resolution with 48 Mb RAM and 340 Mb hard drive.

Music CDs would be antiquated by new joint Philips-Sony proposal to replace the current CD technology with an even higher quality system called DSD; Direct Stream Digital. The new system is described as "a high resolution digital encoding approach that allows music recording of unprecedented quality." To answer critics that such an advance should somehow be "backward compatible" to the hundreds of millions of existing (audio) CD players, Sony-Philips are proposing a hybrid disc which will contain one high-density DSD layer and one standard CD layer. In use with new DSD players, the system provides two channels of stereo and six channels of surround sound. Major concerns: As the audio technology becomes more and more dependent upon digital data streams which are best suited to computer engineering and technology, the music industry worries that when all of the dust settles it will be the computer industry, not the music industry that will set new standards.

Dumb network computers are seen as next major development in integration of telecom industry with the computer industry. Speaking at Supercomm '97 early in June, Oracle Chairman Lawrence Ellison told delegates, "The PC is an over engineered device that makes less and less sense all of the time. The PC was designed as a standalone device, networking was an afterthought. Most PC users require only 5% of the capabilities of the typical PC; let us build devices for the other 95%." Lucent (former Bell Labs) VP Gerald Butters told group, "The PC industry must throw out all of the old engineering rules as the public demands more and more continuous access to Internet." To which Ellison added, "In the next year you will be using a dumb network computer in your everyday work; in five years you will be wearing one."

Flat Panel displays (FPD) versus conventional CRTs (cathode ray tubes). Latest study by Stanford Resources suggests that CRTs will still be in market by year 2020. FPDs are expected to reach world-wide market level of CRTs by 2002 but only in dollars, not in units produced per year. Study further suggests FPDs will have 26% of world market share by 2020 with CRT displays dropping to 42%. Cost is biggest issue - even in 2002, FPD is expected to cost 1.5 to 2 times the price of identical display CRT. Presently LCD version of FPD has 86.5% of the market (which includes computer as well as TV displays); forecast is that by 2002 LCD share will drop to 78% . Taking up the slack will be the relatively new Plasma displays.

Digital (video) taping directly from satellite receivers to newly available D-VHS decks will include authorisation control system under the management of movie copyright owners. A Copy Generation Management System (CGMS) data stream included with the transmission will trigger a special software circuit within the D-VHS decks; if the copyright owner of the movie product does not wish taping done, the deck will ignore (not record) the programme. Thomson and Hitachi have added the CGMS interface to their September release date latest version DBS receivers; JVC was first to announce marketing of an IRD equipped to connect to a D-VHS deck last March. The final word on this new technology is not expected soon: Dutch firm Electronic Digital Delivery has demonstrated high speed data transfer that allows a full length movie to be downloaded in a matter of minutes, through satellite to D-VHS deck, at 14.1 Mbps. No satellite provider has yet stepped up to embrace the technology but the advantages are obvious: Consumers will be able to record movies in a very short period of time, on demand for a fee, and then play back the movie in real time as they wish to view it. Part of this new technology would include a repeat use system to allow movie rights owners to dictate whether the movie, so downloaded and recorded, can be played back one time or multiple times before self-destructing.

Flaw in digital video disc copyright protection system has been revealed in disclosure of plan to correct defect. When DVD player has extracted the encrypted video and audio from the disc, this unprotected (digital) signal is sent through a wire and connector to a digital to analogue converter and analogue remodulator to allow the movie or other content to be viewed. Within that wire, a clever technician could "tap into" the digital MPEG format signal and directly record the content on a D-VHS deck or other digital recording mechanism. In essence,

-Tangled Web of Australian Pay TV Snares Australis Bid for Economic Freedom-

The Supreme Court of New South Wales has told pay television packager Australis and cable operator Optus Vision they may not merge through transfer of Australis Media assets to Optus Vision. The court action was precipitated in a suit filed jointly by News Corp., Telstra and Foxtel who argued that transfer of Australis assets would violate a rule that Australis remain in control of its satellite and MMDS system.

While News Corp and friends were putting the kabash on an Optus attempt to rescue Australis (Galaxy), funds have been running out for Australia's pioneer pay TV operator. Earlier this year Australis received A\$330m from existing stockholders in a recapitalisation. By the end of May this had diminished to A\$35.1m and was continuing to be spent at the rate of A\$1.5m a week (i.e., Galaxy is spending \$1.5m more per week than it is receiving from subscribers). The facility merger with Optus would have produced A\$25m cash and it would have also reduced operating costs by up to 15%. That combination, Australis believed, would have carried the firm through until cash flow turns positive. Now Australis is back seeking funding from stock holders with the belief that by August it's stockholder cash reserves will have been exhausted. Australis debt is in excess of A\$800m, and in 2002 the funds now on loan must be repaid.

Meanwhile, on the cable TV front, Telstra and News Corp who have joint ventured Foxtel Cable are debating what happens if Telstra shuts down cable TV plant expansion before reaching the original target of 4 million homes passed. In the News Corp / Telstra agreement, Telstra had agreed the cable system would pass 4 million homes by a date certain. Presently, Foxtel cable goes past 1.8 to 2 million homes although in many areas it is only cable - not electronics - that is installed. Telstra wants to save money and cut off the cable TV roll-out at something approximating 2.5 million homes. News Corp says that will be a violation of their original agreement - and News Corp believes it is entitled to a penalty fee (to be paid by Telstra) if Telstra goes ahead and shuts down cable construction at anything less than 4 million homes passed. Australian sources say News Corp wants A\$300-400 million from Telstra as a "penalty" if the cable roll out stops prematurely. Telstra is under pressure from government to trim cable investment as a prelude to going out with a public stock float late this year.

At CTD presstime, the latest wrinkle involves a reported agreement between long time media foes Kerry Packer and Rupert Murdoch to consolidate their individual strengths to prevent Australis from ending up in the Optus camp. On June 20th, Packer's PBL sold A\$53.5 million in high yielding Australis bonds to News Corp and Telstra. Packer retains his 14.4% in ordinary voting shares in Australis. Mixed with this is an agreement - option - that allows PBL to acquire up to a reported 25% in Foxtel in the event that Australis merges with Foxtel or if Australis ends up in receivership. The incentive here is that PBL do everything it can to push Australis into either the Foxtel camp, or receivership from which Foxtel and PBL can rescue it. The loser here would be Optus which Australian media reports "is not pleased with PBL's move." PBL had been a major supporter of the Optus rescue package for Australis late last year.

(See report page 15 on other Murdoch activities in the month of June)

the digital signal travels a short distance within the DVD player "unprotected." The proposed solution, which is not included in the DVD players now being sold, is to immediately re-encode the signal in a new encryption format before it is sent further in the player. Much of the DVD industry has agreed to use something called the (IEEE) 1394 "bus" as a transport mechanism for the signal going to the analogue display section. The same bus has also been adopted for use in digital camcorders, will be used for digital TV sets and PCs and will because of volume be low in cost to use in DVD players. The proposal now being considered is to secure the 1394 link from unauthorised use by taking three steps: (1) Copy Generation Management System (CGMS) that specifies that receiving end of the bus link must acknowledge its own authorisation to receive and use the data, (2) Device authentication system in which electronic software "handshake" between both the sending and receiving end must be completed before the transfer of data can take place, and, (3) encryption of the digital signal. Those proposing the system say there is a "double hook" in the plan: Not only must anyone who attempts to modify the system for unauthorised use be capable of overcoming the three levels of authentication, but by holding patents on the technology and granting licences to firms authorised to replicate the technology, the patent holders could take violators into court for hardware patent violation quite separate from bringing charges for software copyright violation. All of this to protect Hollywood movie product from unauthorised use!

Already, grey market of DVD products has developed although players and discs have been in consumer marketplace less than 90 days. Latest development: Internet merchandising of DVD players with claim, "These

players are not coded and will play ANY disc from ANY region, GUARANTEED." Primary sources seem to be Hong Kong where US\$840 buys courier delivered player to any location in world. "Code free" player means that it has somehow been stripped of its "regional identity" which was intended by manufacturers to limit ability of each player to operate with any discs which are not for a specific region of the world. Players are normally internally coded to prevent users from buying discs in early release locations such as USA and transporting discs to later release locations such as Asia, Pacific or Africa. Regional coding system, in place under gentleman's agreement from outset but not universally implemented, works in this way: Through December 31, 1998 - regional coding of players will be coupled with player's authentication and descrambling functions; after that date, regional coding function will be built into DVD-ROM drive itself so that drive will simply refuse to play any disc which does not have a "code match" with the player's signature code. If player changes regions of the world, in theory there will be an ability to upgrade the regional coding a maximum of 5 times by the owner/operator. After that, an authorised service centre can change the regional code a further 25 times. This is a soft way to satisfy needs of movie makers to protect their regional movie distribution business plans without enforcing too much unpleasantness on the consumer. A consumer would be able to watch up to 5 out-of-region movies and reset the regional code of his player at home, an additional 25 out-of-region movies with resetting by an authorised service centre. After 30 total non-in-region film plays, the player will lock and short of being technically competent to modify the software instruction, the user will not be able to view any DVD films from out of their own region.

DVD audio "standard" continues to be a confusing side issue to rapid deployment of digital video discs to consumers. By industry agreement, Dolby AC-3 technology is the "mandatory" audio technology employed for DVD in NTSC countries, whereas MPEG-2 multi channel surround sound is the "recommended" audio format for PAL and SECAM countries. DVD players and discs have not yet come to the consumer marketplace in Europe and Philips is pushing on the movie firms to mandate that movies pressed to disc and released in PAL (+ SECAM) countries be in MPEG-2 audio format, not AC-3. Philips admits it may have waited too late to push for this format decision, and says it is prepared to introduce DVD players in Europe which will have the ability to handle either Dolby AC-3 or MPEG-2 audio tracks from discs.

Video capture product using C-Cube Microsystems MPEG-1 chipset will be built into Python device to be sold by Videonics firm. Python allows real time playback of video captured from Internet or other sources with 200:1 compression ratio, and allows user to take video footage from VCR or other source and encode it into MPEG-1 format for transmission or multimedia use. Python will be packaged with software for placing video onto the Web, allow creation of multimedia presentations and even e-mailing of video clips. Python contains parallel port connection to interface with laptop or office/home PCs. Price will be in range of US\$400.

Minolta and LSI Logic have announced "DCAM" chip that uses 32-bit MIPS to allow still frame cameras to shoot up to 11 complete photos per second. The present state-of-the-art allows a new still frame shot to be captured by digital cameras every 2 to 5 seconds. DCAM is single processor chip, against present cameras which require up to 5 separate chips to complete the digital still frame process. DCAM offers SXGA resolution, another step upward from the present VGA quality of digital stills.

Japanese consumer electronics firms results for year ending March 31: Hitachi - 5% gross sales rise to US\$68.7B, 38% drop in net profit to US\$712m; JVC - 10% sales gain to US\$7.2B, net profit up 6% to US\$36m; Matsushita - 13% sales gain to US\$61.9B, net profit exploded from US\$459m to \$1.1B; Pioneer - 9% gross gain to US\$4.5B, net profit US\$20.3m against loss of US\$81m in prior year; Sharp - 8.5% gain in sales to US\$14.4B, net profit up 7% to US\$392m; TDK - 14.6% sales gain to US\$5B, net profits up 118% to US\$486m; Toshiba - 7% sales gain to US\$44B, 25% net profit gain to US\$541m.

Eastman Kodak is raising its ownership stake in Japanese camera maker Chinon from 12% to 50.1% subject to approval by Japanese government. New investment is approximately US\$15m.

PC sales in Asia-Pacific region rose 13% in the first 3 months of 1997. World market for PCs is on target to be in excess of 80 million units during 1997. In first quarter, Compaq continues as world leader with 10% market share and 1.87 million units shipped, IBM is second at 1.6 million units. Forecasts call for world market growth of 19% this year.

Chinese PC market is experiencing boom; predictions are for 3 million units this year of which 40% are expected to be of Chinese manufacture. Most Chinese PCs use 586-level Pentium and equivalents, averaging around US\$1,200 at retail. Leading Chinese domestic producers are Legend Group (15% of total market) and Great Wall (10% share). Great Wall recently signed agreement with IBM to build PCs, mother boards for export.

Apple Computer is setting up separate company for Newton handheld PC product in a move seen as an attempt to revive the core Apple computer business. Apple put most of its 1993 eggs into the Newton product which flopped in the marketplace, largely on complaints of the ability of handwriting recognition software to function as promised. Later versions improved the software and added a keyboard option.

-Internet Service Provider IHUG Pioneers 500 kbps Data Delivery-

CTD for February (9701, p. 2) reported in some detail plans at TVNZ technical arm BCL to offer terrestrial 12 GHz delivery system (called DDN) to firms wishing to reach consumers with virtually any form of digital video, audio or data. New Zealand's largest Internet service provider, IHUG, has announced a plan to offer to homes and businesses within reach of the Auckland Waiatarua main transmission site (plus other secondary Auckland sites) access to a special version of Internet at a data rate of 500-kbps; effective September 30th.

IHUG says users will have a 45 cm "satellite dish" and electronics installed at their reception point to receive "up to 500-kbps for only \$59 + GST per month." The system works like this.

IHUG has installed 3.1m Ku-band dishes at sites in Auckland, Wellington, Christchurch and Dunedin. These "hub sites" are taking a direct Internet feed from the USA via PAS-2. This data is selectively processed and then delivered to BCL for transmission via the BCL DDN system described by CTD in February. At each home, place of business, a 45 cm "satellite dish" plus LNBF is installed with line of sight to the BCL DDN transmission site a requirement. IHUG calls the indoor portion of the electronics they supply a "high speed modem" but in fact it is a satellite family IRD (integrated decoder receiver) with single unit addressability.

Pricing: Set-up fee (\$69 + gst), Installation (optional - user can do him or herself - \$79 + gst), Monthly Fee (\$59 + gst with first 60 hours, then \$2 per hour). This comes after the user pays \$699 + gst for the "45 cm satellite dish and high speed satellite modem." IHUG says the offer is limited initially to 1,000 users in the Auckland region, they hope to expand (Wellington, Christchurch, Dunedin) before Christmas. Users are charged by the month, in advance each month, and there is a minimum service contract term of 6 months. The package is offered on a cash basis (\$1019.25 including gst), or after a down payment of \$199, 18 monthly payments of \$65.

What the user receives for \$1,019.25 is hardware that approximates the same hardware required for Sky Ku-band DTH (sport channel service) in function but because the IRD portion is digital (Sky hardware is still analogue), there is a significant difference in costs to IHUG: the digital PC IRD is several times the cost of the analogue receiving equipment currently supplied by Sky; US\$345 from a Canadian source. IHUG calls the new service "Star Net."

Philips is having a difficult time completing its "divorce" from troubled German manufacturer Grundig. Philips is at end of 13 year agreement to assume all Grundig losses, a condition to taking a stake in Grundig when the firm's founder died. Philips wants out (CTD 9701, p. 13) and is now arguing that the most recent annual losses of Grundig, claimed to be 631 million marks, is too great a rise from 1995 losses of 598 million marks. Grundig's own forecast of loss for 1996 had been 553 million marks. Philips spokesperson told Wall Street Journal, "There is a significant gap between 631 million marks and the amount we are ready to pay."

In similar action, Danish manufacturer Bang and Olufsen have agreed to pay Philips US\$83.4m to regain the 25% interest Philips holds in the company. Philips and B-O will continue to "work together on product development, especially DVD, for the next 5 years," under the separation agreement.

Cable/Fibre/MDS/Pay TV

United International Holdings (UIH) serious plan to bring up to 18 cable programme channels into Pacific and Asia is in jeopardy following failure to sell package to major Australian cable firms. UIH's Saturn Communications in Wellington market has been planning use of most of the services which would effectively have doubled its channel line-up. UIH has run into several roadblocks - first, attempts to sell the package of channels to either Optus or Foxtel have apparently failed. Second, under New Zealand copyright law, UIH believes it could be forced to sell programming out of the package to direct competitors including First Media or even Sky Network (if either wished to carry this programming). In March, the UIH board reportedly approved spending US\$9m to start the service. Late in May, it was increasingly apparent the project (called APV for Asia Pacific Video) was in trouble. The mechanics were to lease a pair of C-band transponders from Intelsat, use a Philips designed MPEG-2 digital package (similar in design to that in use by NBC from Hong Kong), and package up to 18 full-time television channels plus up to a dozen audio service channels for deliver in PAL format and time adjusted for the Pacific. The uplink would be located on the west coast of the USA. Suggested cable system pricing was in the range of US\$.35 per channel (per home) per month when the initial offering was distributed to selected cable operators early this year. UIH holds a RFR (right of first refusal) for two Intelsat transponders on Intelsat 802 which is scheduled to go to 177E shortly.

A TVNZ news item the evening of June 20th reported that there are indications Sky Network (NZ) is considering "going public" with their stock as a means of raising capital for their continued expansion into the digital world. During May, Sky Networks announced approval of a NZ\$250m funding agreement involving four offshore banks. The TVNZ report suggested Sky's plans to go public "may be designed to bring a well known operator back to the negotiating table" (while showing video of Rupert Murdoch). TVNZ also said that of all of the existing Sky stockholders, only Television New Zealand had elected to stay "on board" with Murdoch/INL before the deal soured late in February (CTD, March p. 10). TVNZ reported 83% of the Sky stock would have been sold to Murdoch/INL at that time, leaving 17% in TVNZ hands.

Correction: CTD for May, p. 17, reported a reluctance of Sky Network office in Gisborne to sell Sky's monthly Skywatch Guide to cable TV subscribers in the community. Gisborne's cable operator reports the refusal to sell guides has been corrected and cable subscribers for Sky are now able to purchase the guide without problems.

Microsoft is investing an initial US\$1B into multiple (cable) system owner-operator Comcast. Microsoft's Bill Gates told press conference he considers cable delivery capabilities for high speed data connections to and from users to be an exciting opportunity to fast track the acceptance of high speed data applications. Presently the computing industry is throttled at the local telecom connection bottleneck which restricts effective delivery speeds for data to 30-kbps or under. Comcast has been a leading proponent of accelerating cable's wideband, high data rate capabilities and the company is already spending more than US\$1.85B to upgrade existing cable TV lines they operate. The Gates-Microsoft investment amounts to 11.5% of Comcast.

After 12 years of trying, the US cable TV industry and the American National Standards Institute are still bickering about "standards" for defining cable-ready TV receivers. Channel designation remains a major area of disagreement and indeed very few cable TV set-top makers agree on how the various TV channels created by a cable system should be numbered. The last proposal accepted by both sides was for 30 TV channels; the present proposal on the table - but not yet agreed upon - deals with as many as 158 TV channels. All of this relates to an analogue TV world and with the transition to digital TV cable carriage now underway, if and when there is agreement on the analogue channel numbering system, it will be time to begin new negotiations for numbering of the more than 500 digital channels expected.

UK cable television industry grew from 2 million to 2.8 million connections in year end May 1997. In UK, average TV subscriber pays US\$40.18 per month. Of 2.8 million cable homes served, 2.5 million now also obtain their telephony service through cable company.

US cable TV growth should go from US\$26B in gross revenue in 1996 to US\$43B by 2002 according to Strategis Group report. Study believes US\$14.4B in earnings will come as a result of introduction of high speed cable modems and digital set-top units. Basic cable penetration is predicted to grow from 1996 62.8 million to 67.9 million in next 5 years.

Terrestrial Broadcasting

UCB detailed "Network Opportunity" booklet prepared by Ernest & Young (accounting firm) offers 34 UHF TV licences on bids due by 14 July. UCB, booklet states, "purchased the TV licences with the intention of establishing a nation-wide Christian based family channel. UCB have decided not to pursue this investment opportunity and accordingly offer the licences for tender." Of the 34 (Management Right) frequencies, 29 have been registered and expire as of 11 March 2010. UCB is currently paying government \$41,560 (+ gst) annually to maintain these licences. The brochure is pointedly directed at offshore investors and gives significant references for non-NZ firms or individuals to pursue a better understanding of "the particulars relating to radio communication in New Zealand." Virtually all of the 29 primary channels are within TV channels 59-62, or the very top end of the UHF TV broadcasting band. Section 17 of the tender document for bidders states: "Neither party without the prior written consent of the other party (may) make any public disclosure as to the purchase price or any other matter relating to the transactions contemplated by the Contract other than the fact that the purchaser has purchased the licence(s) from the vendor." Details from Stephen Tietjens, Ernst & Young, National Mutual Centre, 37-41 Shortland Street, Auckland (fax 64-9-358-1014).

TV4 start-up held one additional surprise for spectrum users; channel 1 (45.25 MHz) is being put into service for coverage of (Auckland) North Shore region from a transmitter located at the new Casino Tower. This is in addition to channel 9 which TV4 is utilising from the consolidated BCL managed site west of Auckland at Waiatarua. This is the reverse of the unique to Wellington situation where TV4 is using channel 2 while TV1 is using channel 1. Under normal circumstances, immediately adjacent channels in the spectrum are not used (see CTD May 9704, p. 7) but channels 1 and 2 are divided by an amateur radio band and are not immediately adjacent to one another. One side effect of this - all amateur radio operators with special licences authorising their use of the "6 metre" amateur band in the Auckland region were notified that as of June 15th, their permits are cancelled in favour of TV4.

TV3 expansion along the west coast of South island is now nearly complete with commissioning of a translator on channel 8 to serve the Greymouth and Hokitika regions.

Ghost cancelling system developed by Philips - then dropped (CTD 9703, p. 10) - is alive and well because of New Zealand initiative. Wellington based Melco New Zealand (Mitsubishi) is producing stand-alone set-top "Ghostbuster" box which carries suggested retail price of \$349. The decoder is fed demodulated (analogue) video image taken from video output on VCR (tuned to appropriate off-air channel). It converts analogue video to digital, samples each line of video at up to 576 points and calculates where line adjustments must be made to cancel second image (ghosting) effects, up to 20 billion times per second (66,666 times per frame); then feeds corrected image back to TV through video input jack. Unit is being sold through retail outlets and aerial installation firms. Application requires transmission of "reference signal" by TV broadcaster; TV3 now does this on nation-wide basis, TV1 and TV2 are reported to provide this reference signal in major portions of North island, some locations on South Island. Melco NZ at 0800-163-526.

Citing earlier success in obtaining (US) government ban on the advertisement of cigarettes and other tobacco related products, US consumer groups are now targeting liquor, beer and wine advertising via television and radio. Groups are calling for legislation that at the very least forces sellers of alcoholic beverage products to "label" their products as a health hazard (not dissimilar to the warning appearing on all packages of cigarettes). Numerous studies are underway including one that is seeking to show relationship between alcohol advertising on TV and the likelihood that children become consumers of alcoholic beverages.

US Government is reviewing decades old policies which allow private and other firms to utilise government owned lands for installation of radio, TV and communication towers at annual lease rates which investigators suggest are "well below market value." A similar concern was voiced in New Zealand early in 1995 about rates being paid for use of public (government controlled) mountain and hilltop sites by TVNZ engineering arm BCL for the installation and maintenance of transmission facilities.

A television network that airs nothing but commercials? Only in America. Paxson Media is completing purchase of UHF station in New York City, claims it will shortly own or operate 50 UHF stations across country which it is to manage as a network. The programming will be "Infomercials" for a minimum of 21 hours each day. What are their chances for financial success? Consulting group study recently released says 65% of Americans admit to having watched Infomercials, 14% of those who have watched one have an interest in ever watching another one. More importantly, of the 65% who tune in an Infomercial, only 11.8% watch through to the end. And, of the 11.8% who watch all the way through - 30% admit they have been motivated to order a product. That works out to 1.83% of the total population is supporting Infomercial marketed products.

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